API Reference Guide

Web Driver

Ver. 1.01

AP3

Table of Contents

1. Manual Guide

This manual contains the information needed to create applications in using AP3's label printers, POS printers and mobile printers with the AP3 Web Driver.

Those who are using the Web Driver are recommended to carefully read the instructions in this manual prior to use.

2. Web Driver Overview

2-1 Features
• The web driver enables to easily control a AP3 printer from a web browser.

2-2 Terminology
• JSON: An abbreviation for JavaScript Object Notation, a lightweight data-interchange format to send and receive simple data with.

2-3 Supported O/S & Web Browser

2-3-1 Windows
Microsoft Windows XP SP3 (32bit) / SP1(64bit)
Microsoft Windows VISTA (32bit/64bit)
Microsoft Windows 7 (32bit/64bit)
Microsoft Windows 8 (32bit/64bit)
Microsoft Windows 10 (32bit/64bit)

2-3-2 Web Browser
XmlHttpRequest Object-enabled web browser

⚠ *Note*	var httpRequest;
	if (window.XMLHttpRequest) { // web browsers other than IE6 (Chrome, etc.)
	    httpRequest = new XMLHttpRequest();
	} else if (window.ActiveXObject) { // IE 6
	    httpRequest = new ActiveXObject("Microsoft.XMLHTTP");
	}

2-4 Supported printer models
• AP3
• AP3-3

3. Web Driver Installation

3-1 Overview

• You can install the web driver and set up the printer to be connected to the PC, and enable the necessary settings to run the web server included in the web driver.

3-2 Installation and Uninstallation of Web Driver

3-2-1 Installation

1) Run the Software_AP3_Web_driver_Setup.exe file and follow the prompts to proceed with the installation.

2) After completing installation, click 'Finish'.
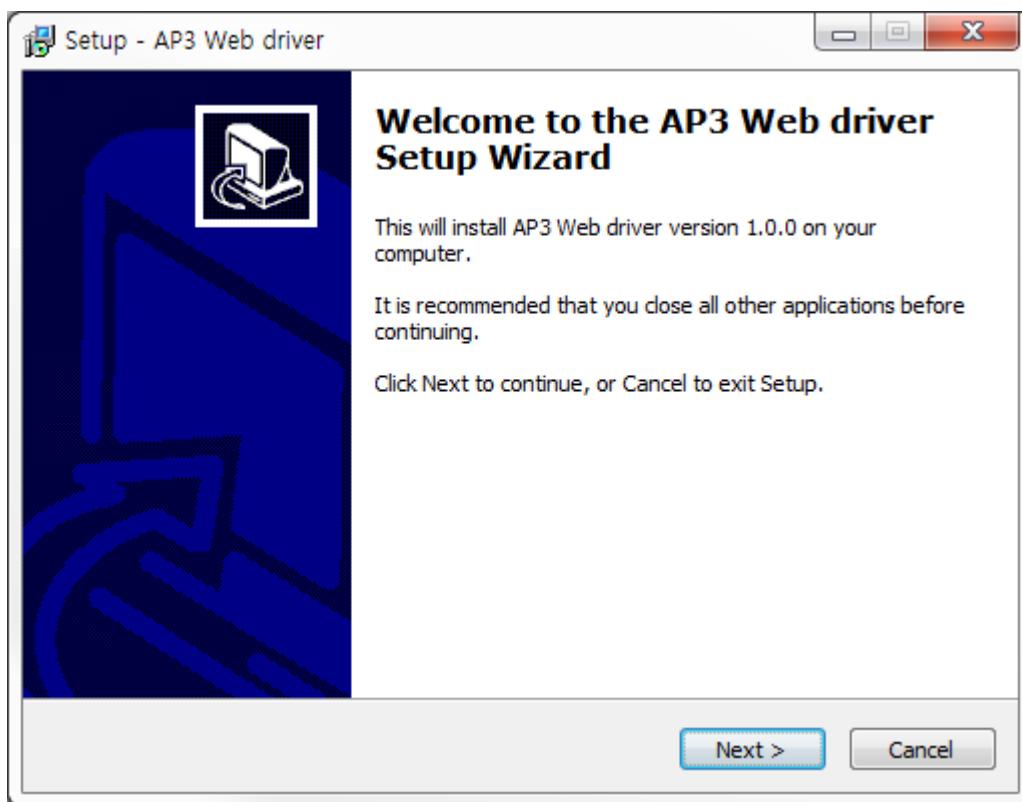
3) If a firewall setting screen is displayed as below, click 'Allow access'.
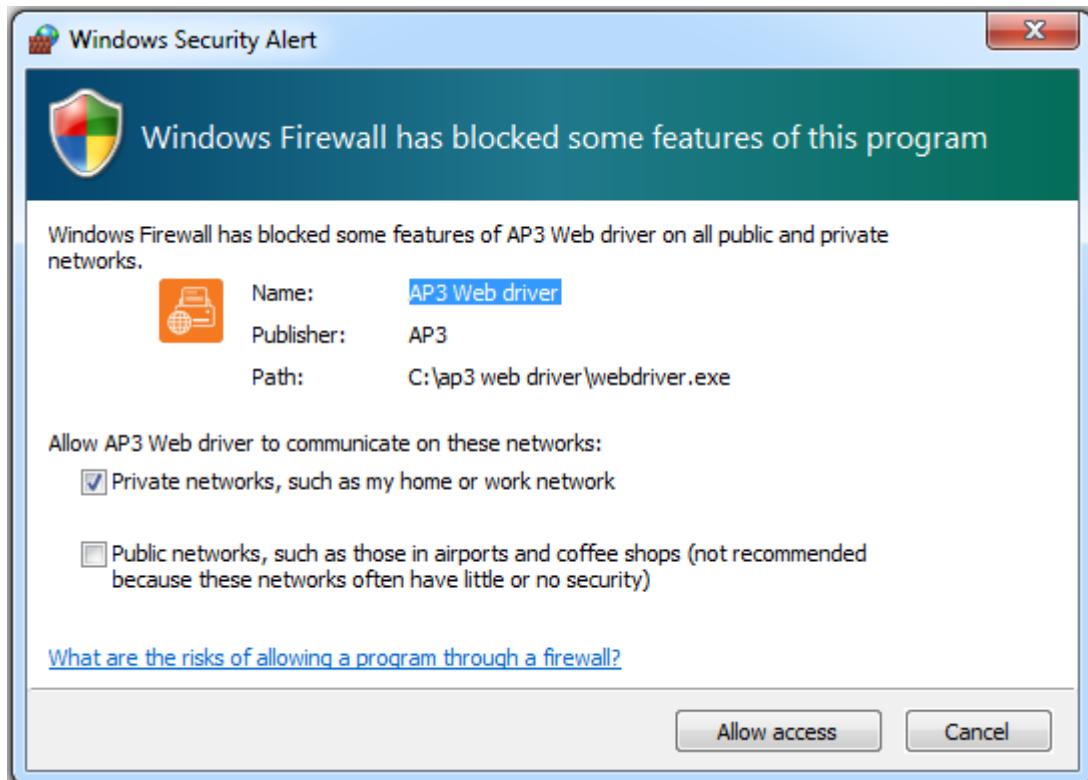
⚠ Caution	If you do not allow access at the firewall, the web driver may not operate normally.

4) The following screen is displayed as the web driver is running.

3-2-2 Uninstallation

Exit the currently running web driver before uninstalling the web driver.

To exit the web driver, right-click on the tray icon at the bottom right of the screen and click 'Exit'.
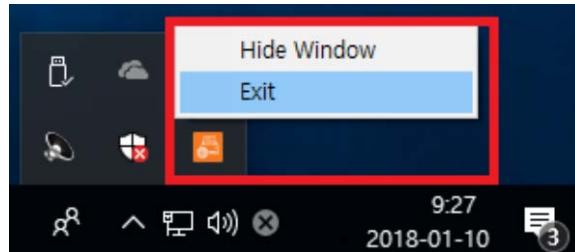

⚠ *Caution*	If you do not exit the web driver, it will not be uninstalled normally.

1) Select 'Uninstall AP3 Web driver' from 'Start' - 'Programs' - 'AP3 Web driver' or delete 'AP3 Web driver' from 'Control Panel' - 'Add / Remove Programs'.
   When the uninstallation screen is displayed, follow the prompts and click the button.

2) In case of normal uninstallation, the following message window appears. Click "OK."
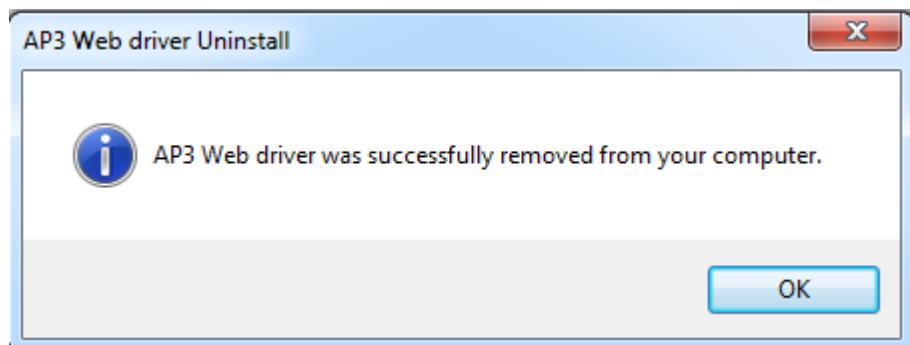
3) In case of abnormal uninstalling, the following message window appears. Select "OK".
   In this case, find the installation folder of web driver and delete the remaining files.
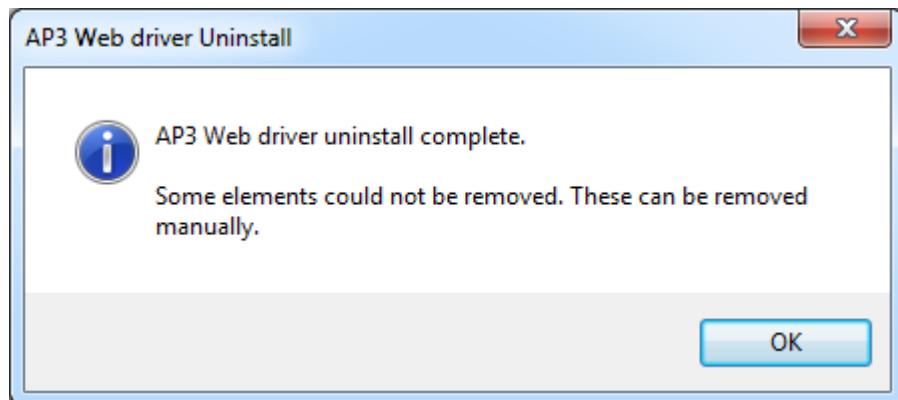
⚠ *Note*	Default installation path : C:\AP3 Web driver

3-3 Printer Settings

• You can set the printer to be used by web driver. The printer must be connected to a PC running the web driver. You can add a printer and modify/delete settings of registered printers.
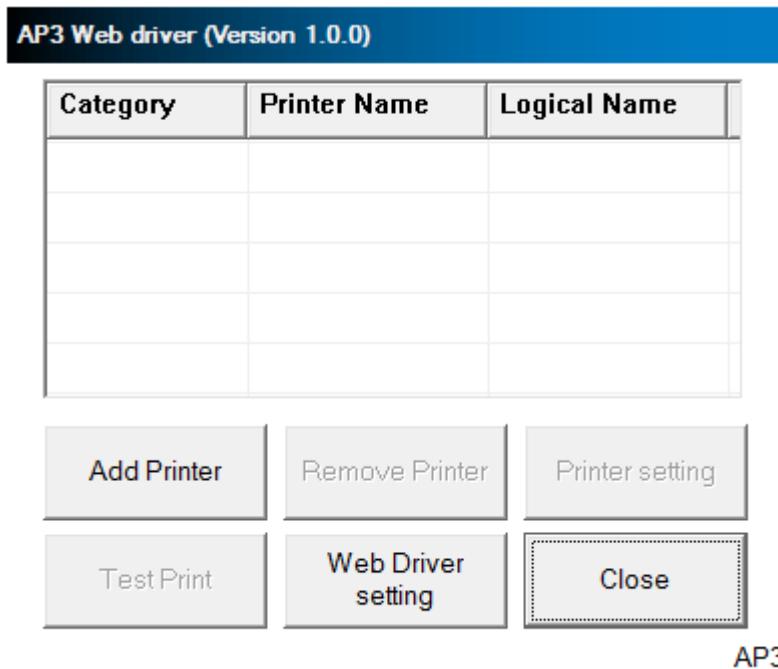
3-3-1 Add printer

1) Click 'Add Printer'.
   Specify 'Logical name', configure the communication settings of the connected printer,
   and click 'Save'.
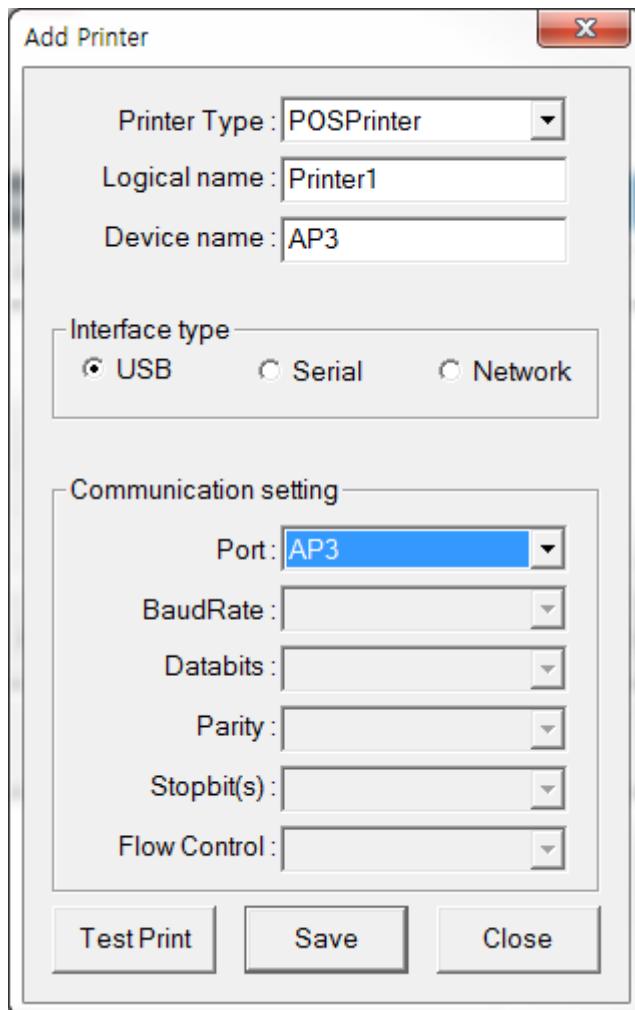
⚠ *Caution*	- If 'Printer Type' is different from the connected printer, it may not operate normally. Choose the right product for your AP3 product line. - If 'Logical name' is not specified, the printer cannot be used in web application. - If USB is selected when there is no USB connected printer, the message 'No printers connected ' is displayed and 'Serial' is selected.

2) If you click 'Search' button for 'Ethernet' communication setting, the IP address of the printer in the same network with the PC is displayed. If the printer's IP is not displayed, you can enter it manually.
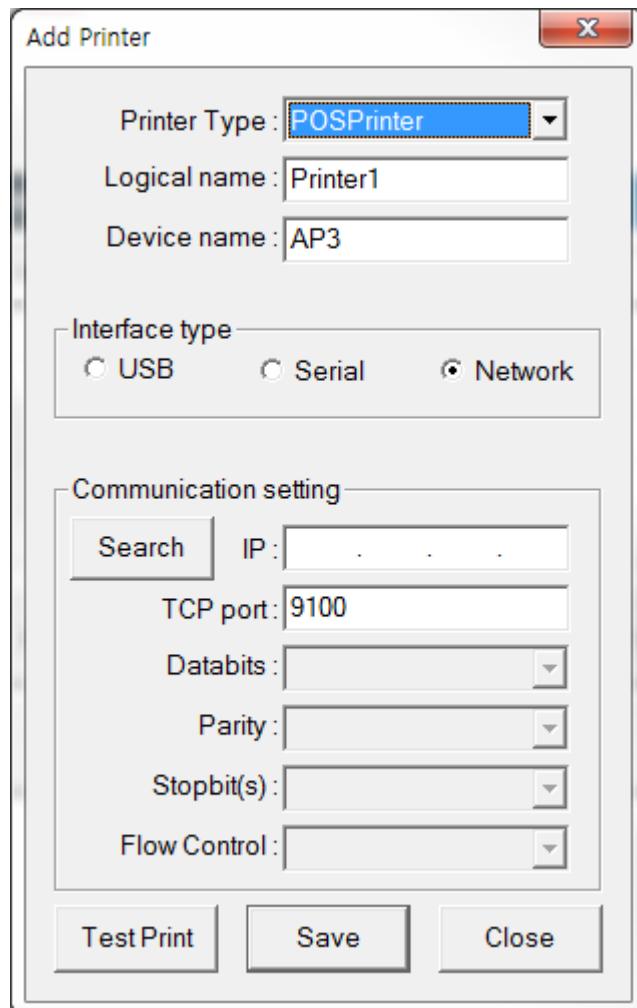
Name	Description
Printer Type	The printer type is displayed.
Logical name	The name of the printer to which the web application will request printing.
Device name	The name of the physical device.
Interface type	Interface of the connected printer.
Port	USB: Display the name of the connected printer or USB information. Serial or Bluetooth: Select COM port. LPT: Select LPT port. Ethernet: IP address.
Test Print	Print test of the currently connected printer.

3) After completing the printer setup, the list of registered printers appears as below.
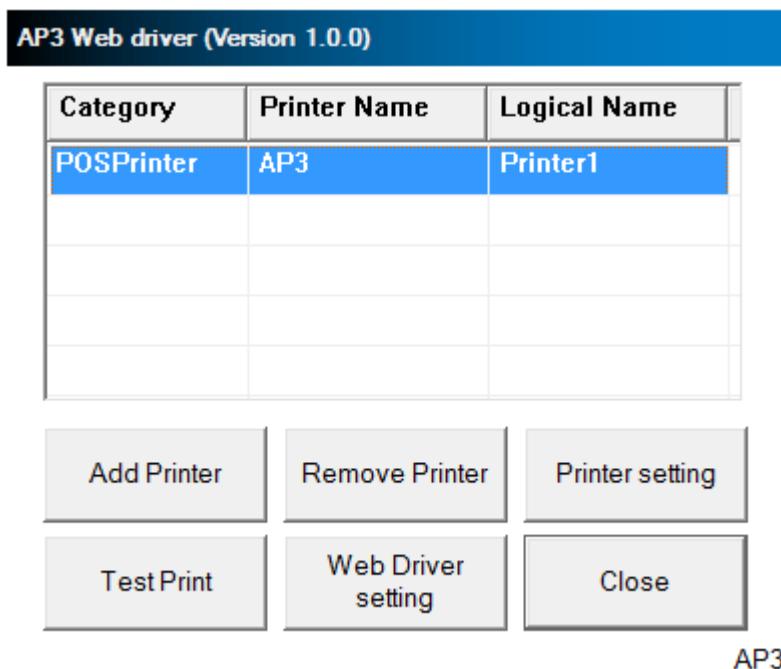
3-3-2 Delete printer
Select the printer to be deleted from the printer list, and then click 'Remove Printer'.

The selected printer will be deleted from the list.

3-3-3 Modify printer settings
Select the printer to be modified from the printer list and click 'Printer setting'.

The same screen as 'Add printer' is displayed.

3-3-4 Print test
Select the printer to be tested from the printer list and click 'Test Print'.

Check whether the printer prints, or not.

⚠ *Caution*	If printing does not work, check the communication settings.

3-4 Web Driver Configuration

• You can configure the web driver.

1) Click 'Web Driver setting'.

Category	Printer Name	Logical Name
POSPrinter	AP3	Printer1

AP3
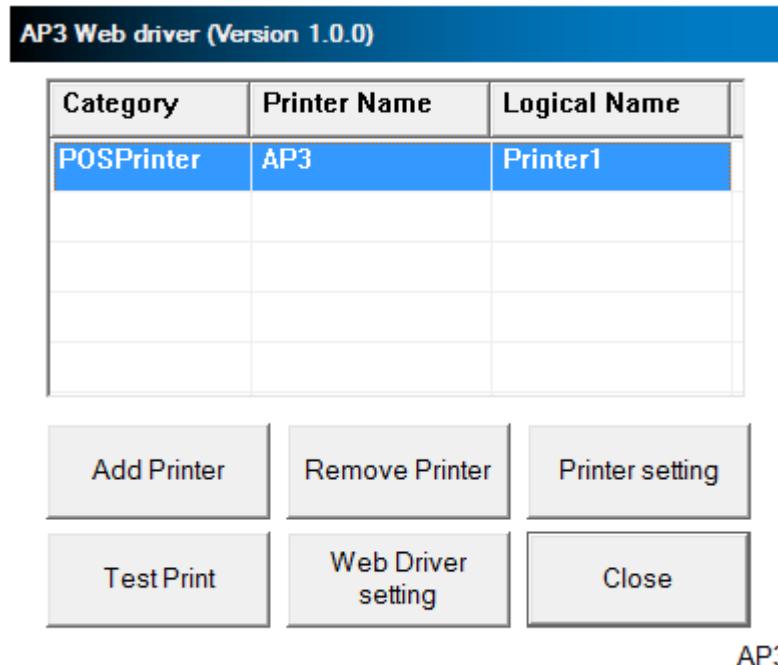
⚠ *Caution*	The web driver setting is applied when re-running after saving.
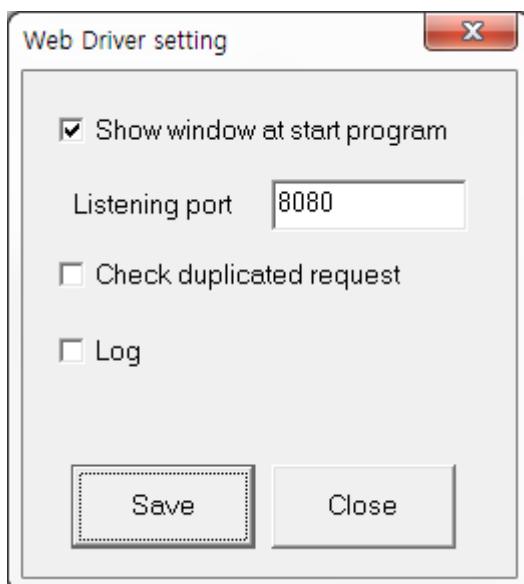
3-4-1 Show window at start program

You can set whether to show the Web Driver window.

When the window is not visible, it is displayed as a Tray icon.

The default is set to 'Show window at start program'.

3-4-2 Set the listening port

You can set the listening port of the web driver. Listening port is the port number on which the Web Driver handles data requests of the web application. The default value is 8080.

3-4-3 Check duplicated request

If a web browser requests duplicated data, it can be checked by the Web Driver.

The default value is 'Uncheck duplicated request'.

3-4-4 Log

You can record the log of Web Driver. The default value is 'disabled'.

4. Web Driver API Reference

4-1 Overview
• The web driver provides basic functions to control the printer. The web browser uses XmlHttpRequest Object to request to the web driver and JSON for the data format to be transferred.

4-2 Generating JSON Data
• To request data processing to the web driver, the mode value, id value of each request, and print request data must be included.

4-2-1 mode
Data processing mode value. Print request data must be generated according to the data processing mode.

Value	Spec
0	API mode
1	Text mode
2	Hex string mode

*sample code
```
{"mode":0,
…
}
```

4-2-2 id
It is a value to prevent duplicated processing of same data in web driver.
Only numeric values are allowed. The duplicated processing option can be disabled.

*sample code
```
{"mode":0,
  "id":1,
…
}
```

4-2-3 Print request data

1) API mode

*sample code

```
{"mode":0, //API mode
  "id":1,
  "functions":{
          "func1":{"function name":[func1 parameters]},
          "func2":{"function name":[func2 parameters]},
          ....
          "funcN":{"function name":[funcN parameters]}
          }
}
```

⚠ **Note** | For more information about APIs when generating print request data of POS printers and mobile printers, see the Printer SDK manual.

2) Text mode
  Without modification, data are transferred to the printer.
  For label printers, label emulation can be used as it is.

*sample code

```
{"mode":1, //text mode
  "id":1,
  "functions":{
          "data":"Web driver text mode sample\n"
          }
}
```

3) Hex string mode
  The data to be sent to the printer is used as a hex string. For POS printers and mobile printers, you can use hex string.

*sample code

```
{"mode":2, //Hex string mode
  "id":1,
  "functions":{
          "data":"77656220647269766572207465787420206d6f64652073616d706c650a"
          }
}
```

4-3 Create XmlHttpRequest Object and request-data processing

• Use POST method when requesting data processing by web driver.

    1) Create XmlHttpRequest object.

    2) Request data processing to the web driver.

The following code is a sample which demonstrates request-data processing to 'Printer 1' set in the web driver. See the sample code below for the response to data processing request.

```
//------------------------ XmlHttpRequest object creation ---------------------------------
var httpRequest;
if (window.XMLHttpRequest) { // web browsers other than IE6 (Chrome, etc.)
    httpRequest = new XMLHttpRequest();
} else if (window.ActiveXObject) { // IE 6
    httpRequest = new ActiveXObject("Microsoft.XMLHTTP");
}
//-------------------------------------------------------------------------------------------
var strURL = "http://127.0.0.1/webdriver/Printer1";
httpRequest.open('POST', strURL, true);
httpRequest.setRequestHeader('Content-Type', 'application/x-www-form-urlencoded');
httpRequest.send(strSubmit);
httpRequest.onreadystatechange = function() {
    if (xmlHttpReq.readyState == 4 && xmlHttpReq.status == 200) {
        var res = JSON.parse(xmlHttpReq.responseText);
        var reqId = res.RequestID;
        var resId = res.ResponseID;
        var ret = res.Result;
        if(ret.search("ready") >= 0 || ret.search("progress") >= 0) { //process request
            checkResult("Printer1", reqId, resId);
        } else if(ret.search("duplicated") >= 0) {//duplicate request
            alert(res.Result);
        }
    } else if (xmlHttpReq.readyState == 4 && xmlHttpReq.status == 404) {
        alert("No printer ");
    } else if(xmlHttpReq.readyState == 4) {
        alert("can't connect to server");
    }
}
```

4-4 Check the Result of Processing with XmlHttpRequest

• Use GET method when verifying result of the requested data processing by web driver.

1) Check Response ID from the response data of 4-3
2) JSON Data creation(including Response ID)
3) Check the result.

See the following sample below.

```
function checkResult(strPrinterName, requestId, responseId) {
    //------------------------ XmlHttpRequest object creation ----------------------------------
    var httpRequest;
    if (window.XMLHttpRequest) { // web browsers other than IE6 (Chrome, etc.)
        httpRequest = new XMLHttpRequest();
    } else if (window.ActiveXObject) { // IE 6
        httpRequest = new ActiveXObject("Microsoft.XMLHTTP");
    }
    //---------------------------------------------------------------------------------------------
    var strURL = "http://127.0.0.1/webdriver/"+ strPrinterName + "/" + responseId ;
    var strSubmit = "{\"RequestID\":"+requestId+",\"ResponseID\":\""+responseId+"\"}";
    xmlHttpCheck.open('POST', strURL, true);
    xmlHttpCheck.setRequestHeader('Content-Type', 'application/x-www-form-urlencoded');
    xmlHttpCheck.send(strSubmit);
    xmlHttpCheck.onreadystatechange = function() {
        if (xmlHttpCheck.readyState == 4 && xmlHttpCheck.status == 200) {
            var res = JSON.parse(xmlHttpCheck.responseText);
            var reqId = res.RequestID;
            var resId = res.ResponseID;
            if(ret.search("ready") >= 0 || ret.search("progress") >= 0)      {
                checkResult(strPrinterName, reqId, resId);//re-try check
            } else {
                alert(res.Result);
            }
        } else if (xmlHttpCheck.readyState == 4 && xmlHttpCheck.status == 404) {
            alert("No printer ");
        } else if(xmlHttpCheck.readyState == 4) {
            alert("can't connect to server");
        }
    }
}
```

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Caution

Some semiconductor devices are easily damaged by static electricity. You should turn the printer "OFF", before you connect or remove the cables on the rear side, in order to guard the printer against the static electricity. If the printer is damaged by the static electricity, you should turn the printer "OFF".

Revision history

Ver.	Date	Page	Description
1.00	17.07.18	-	New
1.01	24.04.19	4	Add model AP3-3